April 25, 2000

D.T.E. 98-95 and D.T.E. 99-82

Petitions of Colonial Gas Company requesting approval from the Department of the recovery of lost margins resulting from Demand Side Management Programs for the periods May 1997 through April 1998 and May 1998 through April 1999.

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FOR: COLONIAL GAS COMPANY

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- INTRODUCTION

On September 17, 1998 and September 15, 1999, Colonial Gas Company ("Company" or "Colonial") filed proposals with the Department of Telecommunications and Energy ("Department") for the recovery of lost base revenue ("LBR")[(1)] and carrying costs associated with its demand-side management ("DSM") programs for the periods May 1997 through April 1998 and May 1998 through April 1999, respectively. These proposals were docketed as D.T.E. 98-95 and D.T.E. 99-82, respectively. Based upon the fact that the proposals are filed by the same petitioner and involve sequential time periods as well as similar issues, the proposals are consolidated for hearing, review and issuance of an order ("Consolidated Dockets").

Pursuant to notice duly issued, the Department conducted a public hearing followed by a technical conference on January 26, 2000.[(2)] The Attorney General appeared at the public hearing and attended the technical conference solely as an observer and did not intervene. No other persons appeared at the public hearing or filed comments for Department consideration nor did the Department receive any petitions to intervene. The evidentiary record consists of nine Company exhibits for D.T.E. 98-95 and nine Company exhibits for D.T.E. 99-82.[(3)] In Section III of this Order we address Colonial's DSM impact evaluations, the Company's resulting LBR, and the appropriate method and time period for recovery of LBR by Colonial.

II. STANDARD OF REVIEW FOR IMPACT EVALUATIONS

In evaluating savings estimates for gas DSM programs, the Department will draw on its experience with electric DSM programs. Bay State Gas Company, D.P.U. 96-98,

at 1 (1997). The Department has found that many estimates of savings that are not actually measured have been biased upward substantially, and has therefore required companies to measure savings using impact evaluations. Massachusetts Electric Company,

D.P.U. 92-217-B, at 4-5 (1994) ("MECo"). The Department has identified and approved a wide variety of techniques for evaluating savings estimates. See MECo at 7-16, 35-38, 47-51, 68-74. However, the Department has found many cases where appropriate techniques have not been applied or have been misapplied to produce savings estimates that are biased upward or downward. See MECo at 5; Boston Edison Company, D.P.U. 96-1-CC, at 3-4, 9-12, 21-22, 24 (1996). Recognizing that obtaining more precise savings estimates has a cost, the Department directed companies to seek increased precision to the extent that the marginal value of more precise estimates exceeds the marginal cost of obtaining the additional precision. MECo at 5.

In MECo the Department introduced a standard of review to be applied to impact evaluations.[(4)] The Department has used the same standard for gas DSM evaluations: in order for a company's DSM savings estimates to be accepted, the company must demonstrate that its impact evaluations are reviewable, appropriate, and reliable. Bay State Gas Company,

D.P.U. 96-98, at 2, citing MECo at 4-6 (1977). An impact evaluation is considered reviewable if it is complete, clearly presented, and contains a summary that sufficiently explains all assumptions and data presented. MECo, at 4-6. An impact evaluation is considered appropriate if evaluation techniques selected are reasonable given the characteristics of a particular DSM program, the company's resources, and the available methods for determining demand and energy savings estimates. Id. Finally, an impact evaluation is considered reliable if the savings estimates included in the evaluation are unbiased and are measured to a sufficient level of precision, again, given the characteristics of a particular DSM program, the company's resources, and the available methods for determining demand and energy savings estimates. Id.

In Boston Gas Company, D.P.U. 94-15 (1995) ("D.P.U. 94-15"), the Department ordered LDCs, when petitioning for the recovery of LBR and incentives from DSM programs, to develop energy savings estimates for their residential and multifamily programs using the Gas Evaluation and Monitoring Study ("GEMS")[(5)] method,[(6)] subject to certain conditions.

See D.P.U. 94-15, at 52-54.

III. THE COMPANY'S DSM IMPACT EVALUATIONS

Colonial requests the recovery of LBR and carrying costs associated with its Residential and Commercial & Industrial ("C&I") DSM programs of $1,243,123 for the period May 1997 through April 1998 (Exhs. 98-CG-1, at 1; 98-CG-4, at 1) and $1,249,806 for the period May 1998 through April 1999 (Exhs. 99-CG-1, at 1; 99-CG-4, at 1). The Company proposes to recover each amount over a twelve month period: the first period commencing

November 1, 1998 (Exhs. 98-CG-1, at 1; 98-CG-4, at 1) and the second period commencing November 1, 1999 (Exhs. 99-CG-1, at 1; 99-CG-4, at 1).[(7)] The following sections break down these total amounts according to customer classes.

A. Residential Programs

1. Description

Colonial states that it used the GEMS method, approved in D.P.U. 94-15, to calculate the savings per thousand cubic feet ("Mcf") for its residential DSM programs in both filings (Exhs. 98-CG-1, at 1; 99-CG-1, at 1). The Company calculated total savings for its residential DSM programs of 215,247 Mcf for the period May 1997 through April 1998 (Exh. 98-CG-3) and 219,367 Mcf for the period May 1998 through April 1999 (Exh. 99-CG-3). The Company states that it calculated the residential program's lost margin amounts based upon the Mcf savings it determined pursuant to the GEMS method (Exhs. 98-CG-1; 98-CG-2; 99-CG-1;

99-CG-2). Based upon these calculations, the Company requests approval for the recovery of LBR associated with its residential DSM program of $738,154 plus $86,879 of carrying costs totaling $825,033 for the period May 1997 through April 1998 (Exh. 98-CG-1, at 1) and $725,281 plus $94,225 of carrying costs totaling $819,506 for the period May 1998 through April 1999 (Exh. 99-CG-1, at 1).

2. Analysis and Findings

The Department has reviewed the Company's estimates of savings associated with its residential DSM programs. The Department finds that the Company appropriately applied the GEMS Method to calculate its estimates of energy savings. Accordingly, the Department finds the Company's estimates of energy savings for its residential program to be reliable, reviewable, and appropriate, and hereby accepts them. Therefore, the Department approves the recovery of LBR associated with the Company's residential DSM program of $738,154 plus $86,879 of carrying costs totaling $825,033 for the period May 1997 through April 1998 and $725, 281 plus carrying costs of $94,225 totaling $819,506 for the period May 1998 through April 1999.

B. C&I Programs

The Company states that it used the impact evaluation process, approved in Colonial Gas Company, D.P.U. 96-31 (1996), to calculate the Mcf savings and the lost margin amounts for its small C&I and its medium C&I DSM programs (Exhs. 98-CG-4, at 1; 99-CG- 4, at 1). Colonial estimates total net savings for the two C&I DSM programs for the period May 1997 through April 1998 are 129,700 Mcf (Exh. 98-CG-9). Colonial estimates total net savings for the two C&I DSM programs for the period May 1998 through April 1999 are 141,374 Mcf (Exh. 99-CG-9). Based upon these estimates, the Company requests the recovery of LBR associated with its C&I DSM program of $378,731 plus $39,359 of carrying costs totaling $418,090 for the period May 1997 through April 1998 (Exh. 98-CG-4, at 1). The Company also requests the recovery of LBR associated with its C&I DSM program of $381,655 plus $48,645 of carrying costs totaling $430,300 for the period May 1998 through April 1999 (Exh. 99-CG-4, at 1). As described below, Colonial used different methods to calculate the savings of its small C&I Program versus its medium C&I Program.

1. Description

a. Estimates of Small C&I Program Savings

The Company notes that thirteen gas savings measures are offered through the small C&I program and customers receive full subsidy for installations of recommended measures

(Exhs. 98-CG-4, at 2; 99-CG-4, at 2). Customers taking service under rate schedules G-41 and G-51 are eligible for this program (id.).

The Company indicates that in order to calculate net Mcf savings for each measure, it discounted the annualized gross savings figure for each measure by a free rider estimate and a persistence factor (Exhs. 98-CG-4, at 3; 99-CG- 4, at 3). The Company defines free riders as those customers who planned to install a measure on their own prior to program participation (Exhs. 98-CG-4, at 3; 99-CG-4, at 3). Colonial states that persistence factors account for measures that remain installed and are operating properly (id.). The Company states that it developed these free rider estimates and persistence factors in Colonial Gas Company, D.P.U. 96-31 (1996) as part of its impact evaluation analysis (id.).

The Company's impact evaluation study indicates that the overall realization rate[(8)] for the small C&I Program is 107% in both periods (id., at 2). Colonial states that this meant gross savings estimated through the impact evaluation were 107% of the savings expected using Colonial's engineering data for this program (id.). To calculate total program savings, the Company multiplied the engineering saving's estimates for the entire population of program participants by the realization rate (id.).

The Company states that the total net savings attributable to the small C&I Program in the Lowell and Cape Cod Divisions for May 1997 through April 1998 amounted to 69,516 Mcf (Exh. 98-CG-9). The Company multiplied the savings times the base rates to arrive at the LBR of $229,596 (id., at 6). The Company also requests $21,997 in carrying costs for its small C&I Program (Exhs. 98-CG-4, at 6 ; 98-CG-9). The Company's request for the total amount of LBR recovery is $251,593 for the 1997-1998 period (Exh.98-CG-9).

The Company states that the total net savings estimates for the small C&I Program in the Lowell and Cape Cod Divisions for May 1998 through April 1999 are 77,822 Mcf (Exh.

99-CG-9). The Company multiplied the savings times the base rates to arrive at the LBR of $238,275 (Exhs.99-CG-9; 99-CG-4, at 6). The Company also requests $29,498 in carrying costs for its small C&I Program for a total amount of $267,773 for its LBR recovery for the 1998-1999 period (Exh. 99-CG-9).

b. Estimates of Medium C&I Program Savings

The Company states that customers on rate classes G-42 and G-52 are eligible for its medium C&I Program (Exhs. 98-CG-4, at 3; 99-CG-4, at 3).[(9)] The Company states that

27 measures for gas savings are offered through the medium C&I Program (id.). Colonial further states that it used "Market Manager", an energy audit and modeling software package developed by Synergic Resource Corporation, to identify appropriate gas savings measures and the associated cost and estimated savings for each customer (id. at 4).

Unlike the use of engineering estimates relied on by the Company to calculate savings for the small C&I Program, the Company derived initial savings estimates by using

customer-specific facility audit data for the Medium C&I Program (id.).[(10)] Colonial states that Market Manager created, for each customer, an energy model that simulated the energy use of a facility prior to the installation of any measure (id.). The Company then added savings measures to the model and estimated annualized Mcf savings for each customer (id.). In order to calculate the gross annual Mcf savings for each customer, the Company subtracted the estimated gas usage for a facility with measure installations from the facility's existing gas usage (id. at 4-5).

The Company claims that the total net savings attributable to the Medium C&I Program in the Lowell and Cape Cod Divisions are 60,184 Mcf for May 1997 through April 1998 (Exh. 98-CG-9) and 63,553 Mcf for May 1998 through April 1999 (Exh. 99-CG-9). The Company used these total net savings figures as the basis for its LBR calculations (Exhs. 98-CG-4, at 7;

99-CG- 4, at 7). The Company requests recovery of $149,135 in LBR and $17,362 in carrying costs totaling $166,497 for its medium C&I Program for May 1997 through April 1998 (Exh. 98-CG-9). For May 1998 through April 1999 the Company requests recovery of $143,380 in LBR and $19,147 in carrying costs totaling $162,527 (Exh. 99-CG-9).

2. Analysis and Findings

The Department notes that Colonial used the same evaluation methods previously approved in D.P.U. 96-31 and in D.T.E. 97-112 to determine total savings for its small and medium C&I DSM programs. The Department has previously accepted a different methodology for small and medium C&I calculations which is consistent with the methodology used by the Company in its current proposals. The Department's review of the record shows that the Company's impact evaluations for C&I DSM programs are complete and clearly presented, with all data and assumptions sufficiently explained. Accordingly, the Department finds that the Company's impact evaluations for its C&I DSM programs are reviewable. Furthermore, upon review of the record in this case, the Department finds that the evaluation techniques Colonial used for its C&I programs are reasonable and are consistent with previous Department Orders. Therefore, we find that the Company's impact evaluations for Colonial's C&I programs are appropriate.

The Department also notes that the savings estimates for Colonial's C&I programs are based on: (1) engineering savings estimates multiplied by the realization rate for small

C&I customers; and (2) customer-specific Market Manager reports for medium C&I customers. Based on our review of the filing, we find that these estimates are sufficiently unbiased and are measured to a sufficient level of precision. Accordingly, the Department finds that the Company's savings estimates for its C&I programs are reliable. Therefore, the Department approves the recovery of LBR associated with the Company's C&I DSM program of $378,731 plus $39,359 carrying costs totaling $418,090 for the period May 1997 through April 1998 and $381,655 plus $48,645 carrying costs totaling $430,300 for the period May 1998 through April 1999.

IV. ORDER

Accordingly, after due notice, hearing and consideration, it is

ORDERED: That the savings estimates associated with Colonial Gas Company's residential DSM program are approved for recovery of LBR of $738,154 plus $86,879 carrying costs totaling $825,033 for the period May 1997 through April 1998 in D.T.E. 98-95 and LBR of $725,281 plus $94,225 carrying costs totaling $819,506 for the period May 1998 through April 1999 in D.T.E. 99-82; and it is

FURTHER ORDERED: That the savings estimates associated with Colonial Gas Company's C&I DSM program are approved for recovery of LBR of $378,731 plus $39,359 carrying costs totaling $418,090 for the period May 1997 through April 1998 in D.T.E. 98-95 and LBR of $381,655 plus $48,645 carrying costs totaling $430,300 for the period May 1998 through April 1999 in D.T.E. 99-82; and it is

FURTHER ORDERED: That amounts approved in this Order for recovery shall be recovered over 12 month periods beginning November 1, 1998 and November 1, 1999.

By Order of the Department,

James Connelly, Chairman

W. Robert Keating, Commissioner

Paul B. Vasington, Commissioner

Eugene J. Sullivan, Jr., Commissioner

Deirdre K. Manning, Commissioner

Appeal as to matters of law from any final decision, order or ruling of the Commission may be taken to the Supreme Judicial Court by an aggrieved party in interest by the filing of a written petition praying that the Order of the Commission be modified or set aside in whole or in part.

Such petition for appeal shall be filed with the Secretary of the Commission within twenty days after the date of service of the decision, order or ruling of the Commission, or within such further time as the Commission may allow upon request filed prior to the expiration of twenty days after the date of service of said decision, order or ruling. Within ten days after such petition has been filed, the appealing party shall enter the appeal in the Supreme Judicial Court sitting in Suffolk County by filing a copy thereof with the Clerk of said Court. (Sec. 5, Chapter 25, G.L. Ter. Ed., as most recently amended by Chapter 485 of the Acts of 1971).

1. LBR or lost margins are defined as the non-gas-cost portion of a gas utility's base rates that is lost between rate cases as a result of reduced sales caused by the implementation of Demand Side Management programs. Boston Gas Company, D.P.U. 90-17/18/55, at 139 (1990).

2. Immediately following the conclusion of the public hearing and based upon the absence of any intervenors in the consolidated dockets, the Hearing Officer conducted a technical conference to review the Company's filings pursuant to 220 C.M.R. §1.08(1) in lieu of the originally scheduled evidentiary hearing.

3. For the purposes of clarity and simplification in referencing exhibits in this Order, references to exhibits under D.T.E. 98-95 will be preceded by an abbreviated designation "98" and references to exhibits under D.T.E. 99-82 will be preceded by an abbreviated designation "99".

4. Impact evaluations use quantitative analyses to assess energy and capacity savings resulting from the implementation of DSM programs. MECo at 1.

5. GEMS was a comprehensive research project which used a variety of analytical tools to evaluate the effectiveness of residential and multi-family natural gas DSM programs. D.P.U. 94-15, at 1 n.1.

6. GEMS method refers to the overall analytical framework established by Boston Gas Company to: (1) determine the effectiveness of Boston Gas Company's residential DSM programs by estimating the amount of gross energy saved from a sample of its residential customers; (2) transfer these results to its residential DSM and non-host local distribution companies' DSM programs; and (3) adjust gross savings to account for factors that affect net program savings. D.P.U. 94-15, at 1 n.2.

7. The Department notes that the Company's Peak 1998/99 cost of gas adjustment factor and Peak 1999/00 cost of gas adjustment factor approved on October 31, 1998 and October 31, 1999, respectively, included the LBR and carrying costs proposed for recovery in this proceeding.

8. [8] A DSM tracking system contains estimates of the savings based on the original engineering estimate of savings for each measure. Bay State Gas Company,

D.P.U. 96-98, at 4 (1997). An impact evaluation, on the other hand, estimates the amount of savings actually achieved. Id. The ratio of this latter estimate to the former tracking estimate is called a "realization rate." Id.

9. The Department notes that the Company includes large rate class customers (G-43 and G-53) in its C&I Program for medium class customers (G-42 and G-52).

10. Customer-specific facility audit data is explained by the Company as its offer to each customer of an audit of their facility under which an energy model is created to simulate the energy use of that customer's facility prior to installation of the program measure. Recommended program measures are then added to the model and estimated savings are calculated for each customer.